



2006 CAISO Transmission Plan

**Presentation to the
California ISO Board of Governors**

January 24, 2007

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2006 CAISO Transmission Plan

- The first CAISO Transmission Plan is before you today
 - Plan presented to stakeholders in early December
- An old era ends
 - Individual PTO plans received and reviewed
 - CAISO review focused on individual projects, not an overall plan
 - Operational concerns/issues generally were not addressed
- A new era begins with this 2006 Transmission Plan
 - Single transmission plan for the CAISO Controlled Grid
 - PTO and CAISO projects combined into a single plan
 - Operations, short-term, mid-term, and long-term focus
 - CAISO review focuses on overall plan
 - Consistent with sub-regional planning principles

What Is In the “Plan”

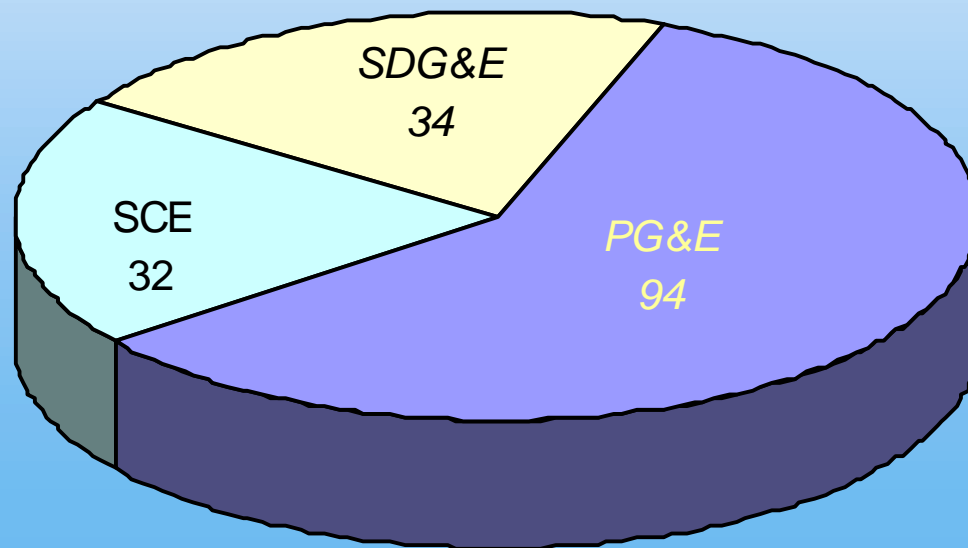
- Annual transmission plan prepared jointly by the CAISO and PTOs and reviewed by stakeholders
- Coordinated with the PTOs, CEC, and CPUC
- Documents all CAISO and PTO studies
 - All projects under \$20M approved by CAISO Management
 - All projects \$20M or greater are listed but individually approved by CAISO Board
 - All projects that are anticipated to be brought before the CAISO Board
- Projects to be considered for “approval” by the CAISO must be in the Plan
 - No more closure letters
- Fifteen year planning horizon
- Five year LCR horizon
- Baseline deliverability studies
- Integrate relevant CEC IEPR recommendations

2006 “Plan” Highlights

Transmission

- Documents 160 transmission project proposals
- Includes the seven CAISO Transmission Initiatives presented to the Board in April 2006

Number of Projects





2006 “Plan” Highlights

Transmission

- Summarizes major California and inter-regional planning initiatives
 - Tehachapi Project
 - Sun Path Project (Sunrise + Green Path)
 - LEAPS Project
 - Trans Bay Cable Project
 - Midway – Gregg Line
 - Frontier Line
 - New British Columbia – California Line
 - West Coast Cable Project

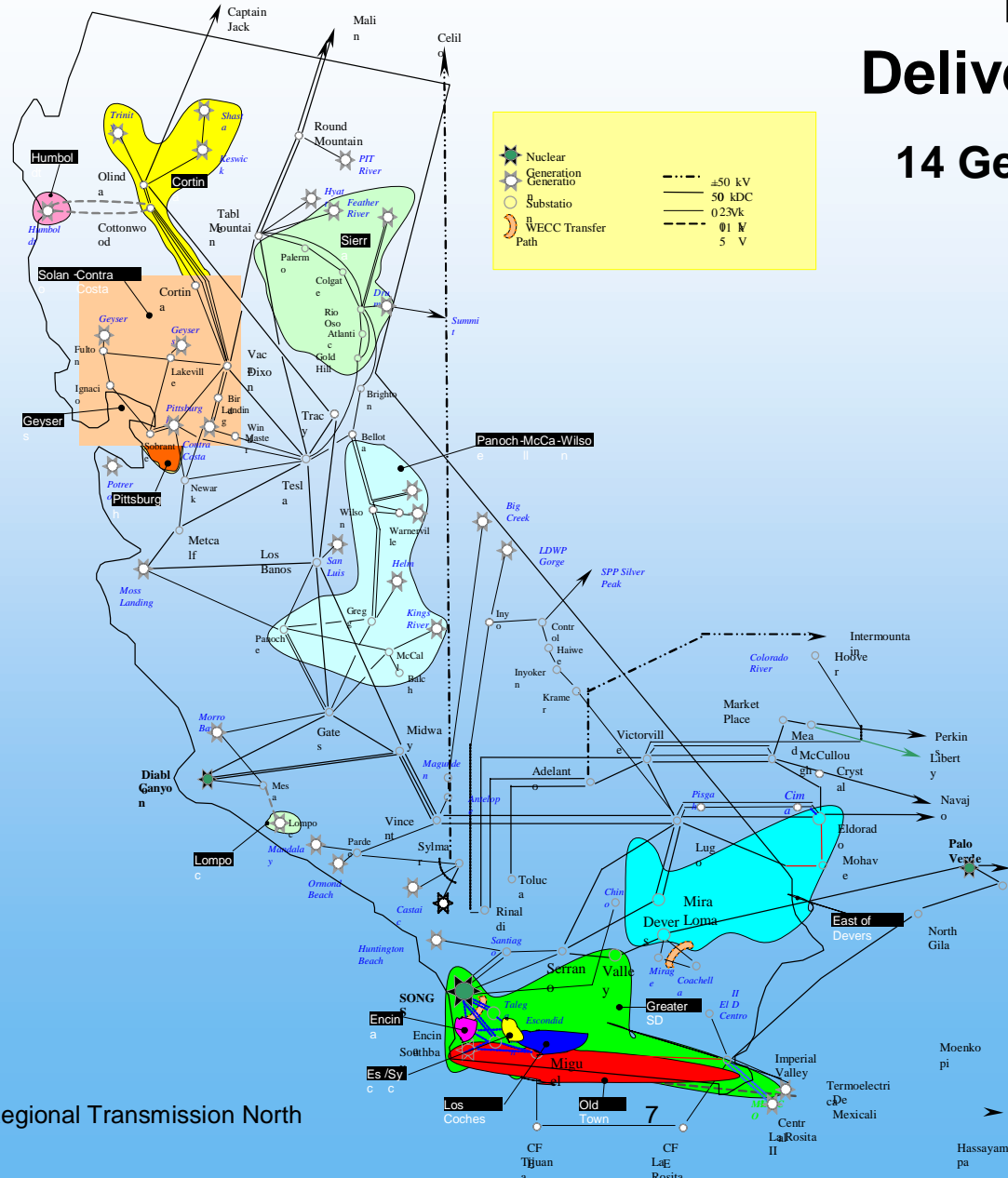
2006 “Plan” Highlights

Deliverability

- Phase I
 - Evaluation of all generation expected to be in operation in 2006 (58,000 MW)
- Phase II Complete by February 2007
 - Phase IIA evaluates all generation in the interconnection “queue” as of March 30, 2005 (22,000 MW)
 - Phase IIB will include all remaining generation in the interconnection queue
- Phase II Report
 - List of new resources that do not pass deliverability test
 - Amount of non-deliverable capacity for new resources
 - Conceptual transmission project alternatives that would ensure their deliverability

Phase IIA Deliverability Study

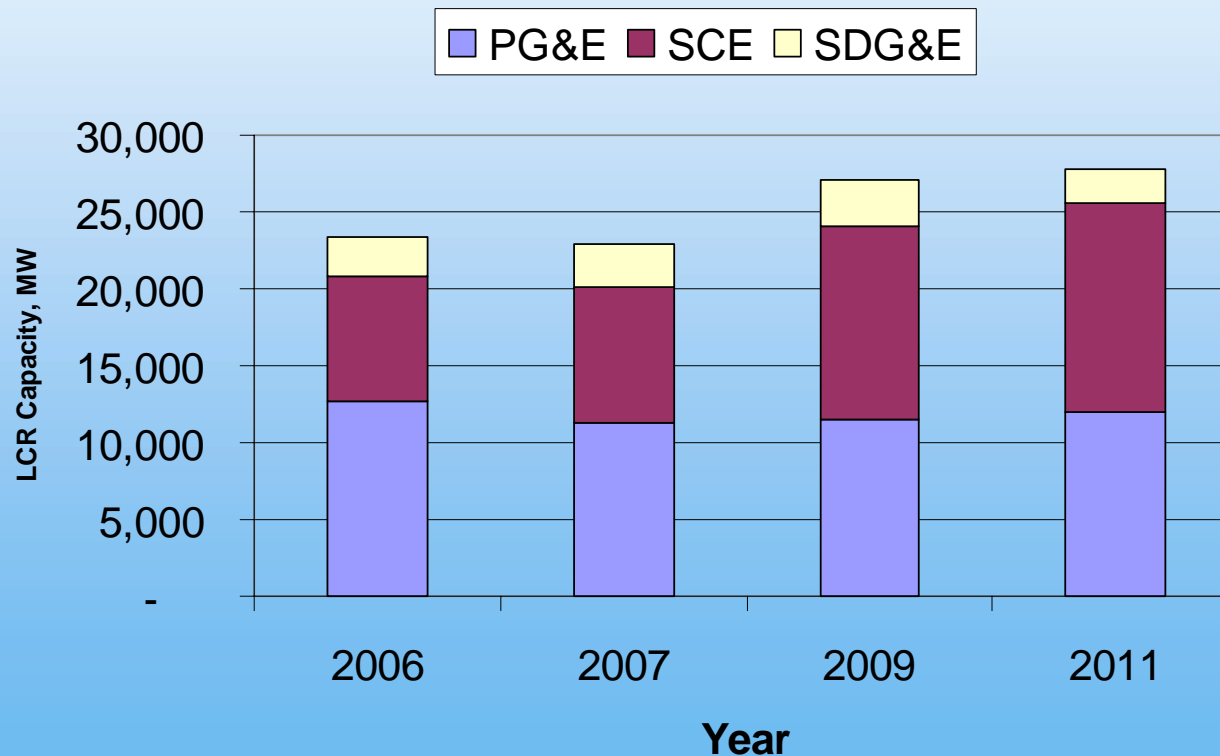
14 Generation Pockets Identified



LCR Outlook

Requirements For 2006 & 2007

Anticipated Trend 2009 & 2011



2006 “Plan” Highlights

Short-term Plan and Operating Guides

- Short-term Plan
 - Analyzes system from 1 to 3 years in advance and recommends to anticipated operations and reliability issues
 - Focuses on operational gaps; congestion and reliability
 - 21 recommendations proposed to PTOs based on 2006 summer operation
- Operating Guide
 - Consolidates the next year calendar projects
 - *53 projects calendared for 2007*
 - Describes the transmission impacts of the project
 - Relates each project to the affected Operating Procedures
 - Provides a work-plan for updating OTC, Operating Procedures, and necessary tools

Excerpt From the 2006 Operating Guide

#	Project Title	Region	Project Scope	System Impact	Targeted In-Service Date
1	Ignacio 115/60kV Transformer	PG&E – North West	Replace the 115/60kV transformers with a larger unit (200 MVA)	Reduces T-1 concern and increases reliability to 60kV customers. Removes the Ignacio #1 or #3 Bank SPS.	05/01/2007
2	Lakeville-Sonoma 115kV line	PG&E – North West	Construct one new 115kV line from Lakeville to Sonoma Sub.	Improves L-1 voltage performance at Sonoma and Pueblo substations.	05/01/2007
3	Tulucay 230/60kV Transformer	PG&E – North West	Install a new 230/60kV transformer (200 MVA)	Increases transformer capacity	05/01/2007
4	Fulton-Lakeville 230kV line	PG&E – North West	Reconfigure transmission to create a Fulton-Lakeville 230kV line.	Increases Import capacity into South Geysers, reduces RMR requirement.	11/30/2006
5	Reliability Project: Rio Dell Jct CB 42 & 22 Relay Replcmnt	PG&E – North West	Replace Relays to increase the rating from 400A to 4/0 AL ratings of 297, 345, 443, 473 Amps	Increases import/export capability under some clearance conditions at Humboldt Bay PP.	10/16/2006
6	Reliability Project: Maple Creek CB 42 Relay Replacement	PG&E – North West	Replace Relays to increase the rating from 300A to 4/0 ACSR ratings of 297, 345, 443, 473 Amps	Increases 60kV line capacity.	08/31/2006
7	W. Sacramento-Davis Transmission	PG&E – North East	Reconductor the West Sacramento-Davis 115kV line (215 MVA)	Increases import capacity into Woodland and Davis 115kV system. Reduces L-1 concerns under clearance conditions.	10/01/2006
8	Colgate-Rio Oso 230kV Line Re-Rate	PG&E – North East	Rerate 230kV transmission lines for 3fps (429 MVA)	Increase 230kV line capacity.	12/01/2006
9	Davis-UC Davis 60kV to 115kV conversion	PG&E – North East	Convert two 60kV lines between Davis and UC Davis to 115kV (252 MVA)	Increases voltage performance and thermal capacity to UC Davis.	12/01/2006
10	Colgate 230/60kV Capacity Increase	PG&E – North East	Replace 230/60kV transformer at Colgate Powerhouse with a larger unit and install a spare phase (135 MVA)	Part of plan to radialize 60kV system. Once radial, the Colgate T-1 concern will be eliminated.	03/01/2007
11	Pease-Marysville 60kV line	PG&E – North East	Construct new 60kV transmission line (117 MVA)	Part of plan to radialize 60kV system. Once radial, the Colgate T-1 concern will be eliminated.	05/01/2007
12	Mtn Quarries 60kV Tap Reconductor	PG&E – North East	Reconductor Mountain Quarries 60kV Tap (46 MVA)	Increase 60kV line capacity.	05/01/2007

2006 “Plan” Highlights

- Area assessments
 - Detailed assessment and analysis of the CAISO Controlled Grid
 - Ten-year planning horizon
 - CAISO staff has identified over 30 LCR, Deliverability, and congestion issues across the Grid
 - Solutions are being considered for all issues
- Future Plans (2007)
 - Scenario assessments
 - Congestion analysis pre and post MRTU
 - Resolution to LCR issues
 - Long-term Firm Transmission Rights
 - Import allocations within a Resource Adequacy framework
 - Probabilistic planning (LOLP) for LCR and Capacity Market
 - Third category of new transmission facilities
 - Rebuttable presumption

End of Presentation